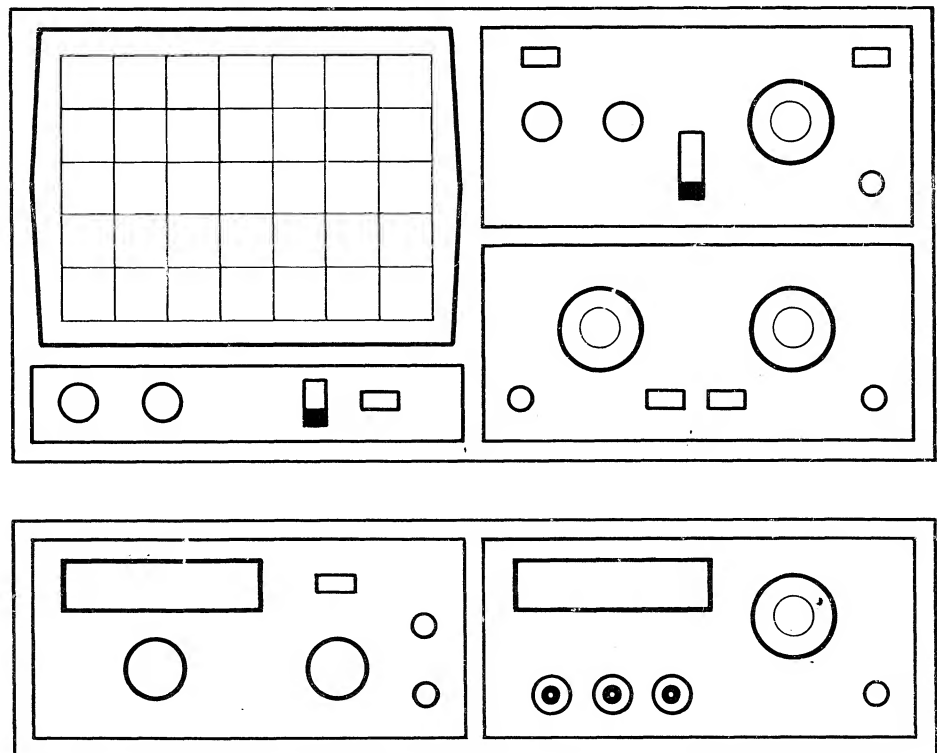


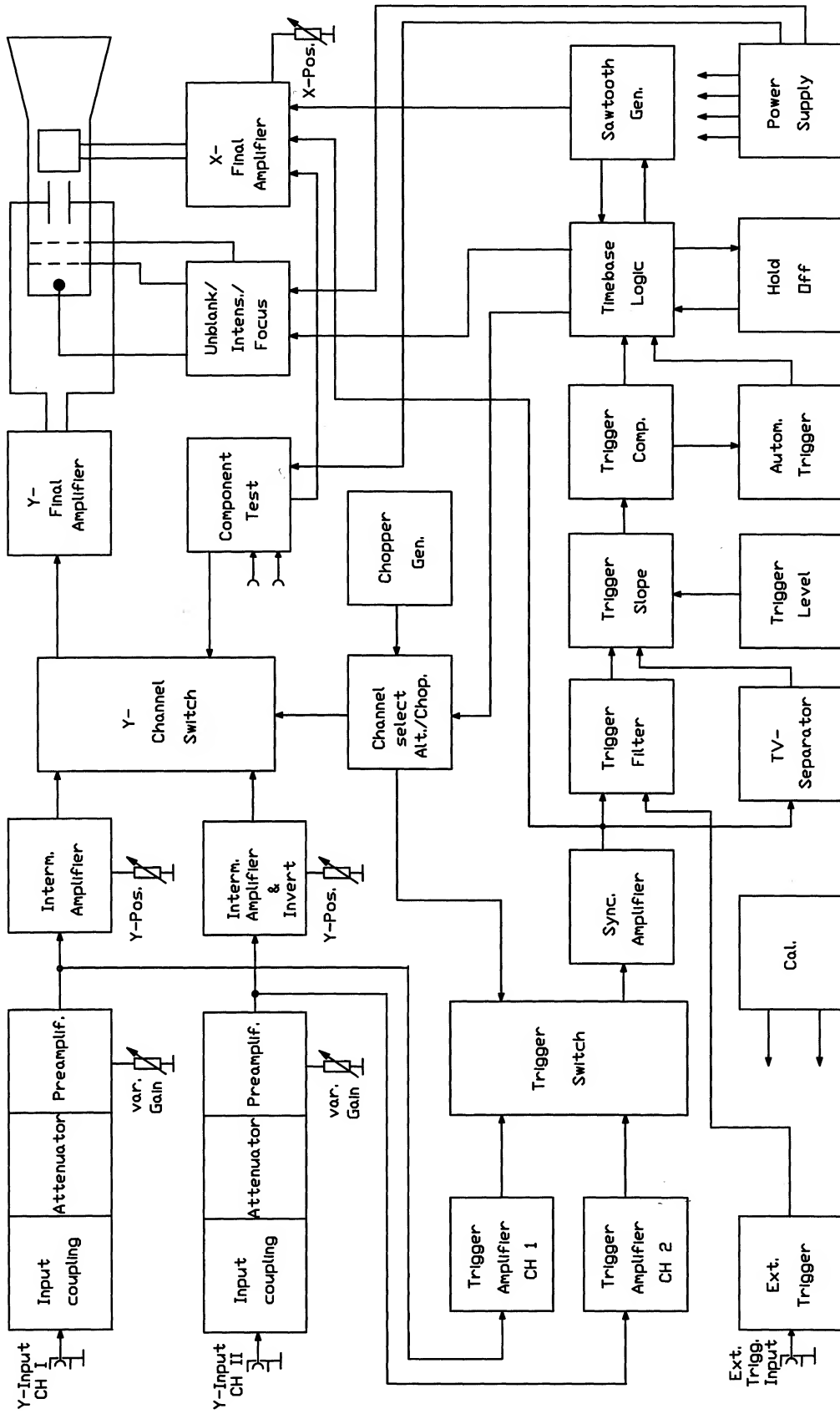
# **HAMEG**

## **Instruments**

### **MANUAL**

#### **Oscilloscope HM 203-7**







Die elektrischen Bauteile sind so gekennzeichnet, daß die erste Nummer mit der Baugruppen-Nummer übereinstimmt:

- 0..  
Chassis  
Y-Eingang, ext. Triggereingang,  
Gerätestecker, Netzschalter, Netztransformator usw.
- 1..  
EY-Board I+II  
Eingangsteiler, Y-Vorverstärker (Kanal I + II), GD-AC/DC Schalter
- 2..  
X/Y-Board  
Y-Zwischenverstärker, Kanalauswahlungs-Flip-Flop,  
Dioden-Schaltlogik, Chopper-Generator, Triggervorverstärker,  
Niederspannungsversorgung, Testleiste, X-Endverstärker,  
Y-Endverstärker, Component-Tester
- 3..  
TB-Board  
Triggerschaltung, Zeitbasis, Hold-off Schaltung, Helllastung,  
TV-Sync-Sep., Potentiometer für Strahldrehung,  
Hochvolt-Stromversorgung, Testleiste
- 7..  
CO-Board  
Potentiometer für horizontale Strahlage, Power LED,  
Potentiometer für Hold-off, Potentiometer für Helligkeit und Fokus
- 9..  
CRT-Board  
CRT-Fassung

Abkürzungen u. Symbole / Abbreviations and Symbols

Al...	Gerätestecker	/	Appliance inlet
C...	Kondensator	/	Capacitor
TS...	Testpunkt (Testleiste)	/	Check point (check strip)
CN...	Steckverbinder	/	Connector
D...	Brückengleichrichter	/	Bridge rectifier
D...	Diode	/	Diode
D...	Leuchtdiode	/	Light emitting diode
F...	Sicherung	/	Fuse
IC...	Integr. Schaltung	/	Integrated circuit
L...	Spule, Drossel	/	Inductor, Coil
P...	Stecker	/	Plug
SP...	Lötöse	/	Eyelet
R...	Widerstand	/	Resistor
S...	Schalter	/	Switch
T...	Transistor	/	Transistor
TR...	Transformator	/	Transformer
VC...	Trimmkondensator	/	Variable capacitor
W...	Draht	/	Wire
D...	Zenerdiode	/	Z-Diode

- △...  
\*  
Modellabhängig  
Bauteil / Wert abhängig  
vom CRT-Typ
- ...  
Achtung - Hinweise d. Handbuchs berücksichtigen  
Attention - Refer to manual
- ...  
Gefahr - Hochspannung / Danger - High voltage
- ...  
Schutzleiter - Erdschluß  
Protective ground (earth) terminal
- ...  
Kühlkörper/Thermokopplung  
Heat sink/thermal coupling

Electrical components on certain parts of the HM203-7 are marked such that the first numeral is on:

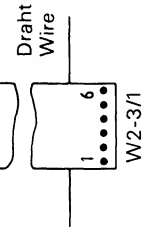
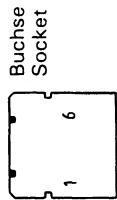
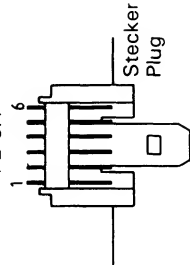
- 0..  
Chassis  
Y-inputs, Trig.-ext. input, Appliance inlet,  
Power switch, Power transformer
- 1..  
EY-Board I+II  
Attenuator and Preamplifier (Channel I + II), GD-AC/DC switches
- 2..  
X/Y-Board  
Y intermediate amplifiers, Channel selection flip-flop,  
Y-Gate driver stages, Chopper generator, Trig. and ext. Trigger  
amplifier, Trig. gate driver stages, LV-Power, Check point strip,  
Component tester, X-Final amplifier, Y-Final amplifier
- 3..  
TB-Board  
Trigger circuit, Timebase circuit, Unblanking circuit,  
Hold-off circuit, TV sync. separator, Trace rotation pot.,  
High voltage power supply, check strip
- 7..  
CO-Board  
X-pos. pot., Power LED, Hold-off potentiometer,  
Intensity- and Focus potentiometer
- 9..  
CRT-Board  
CRT socket

Testleisten / Check strips

XY-Board		TB-Board	
10	•	NC	•
9	•	+152V	•
8	•	NC	•
7	•	GND	•
6	•	NC	•
5	•	+12V	•
4	•	NC	•
3	•	+5V	•
2	•	NC	•
1	•	-12V	•

10	•	cath.
9	•	NC
8	•	-1900V
7	•	NC
6	•	NC
5	•	NC
4	•	GND
3	•	NC
2	•	ST W
1	•	NC

TB-Board 3..  
P2-3/1



X/Y-Board 2..  
W2-3/1

Beispiel Kabelverbindung: P2-3/1-⑤ bzw. W2-3/1-⑤

- P = Flachkabelstecker (auf Board ..)  
W = Flachkabelverbindung: eine Seite verlötet, andere Seite Buchsenleiste  
2-3 = Verbindung zwischen Board 2 und Board 3  
1 = 1. Flachkabelverbindung zwischen Board 2 und 3  
⑤ = Draht-Nummer des Flachkabels

Example, cable connection: P2-3/1-⑤ or W2-3/1-⑤ respectively

- P = Flat cable plug (soldered on board..)  
W = Flat cable wiring (direct soldered on board) with socket (movable)  
2-3 = Connection between Board 2 and Board 3  
1 = First flat cable connection between Board 2 and 3  
⑤ = Serial number of the wire (in the flat cable)

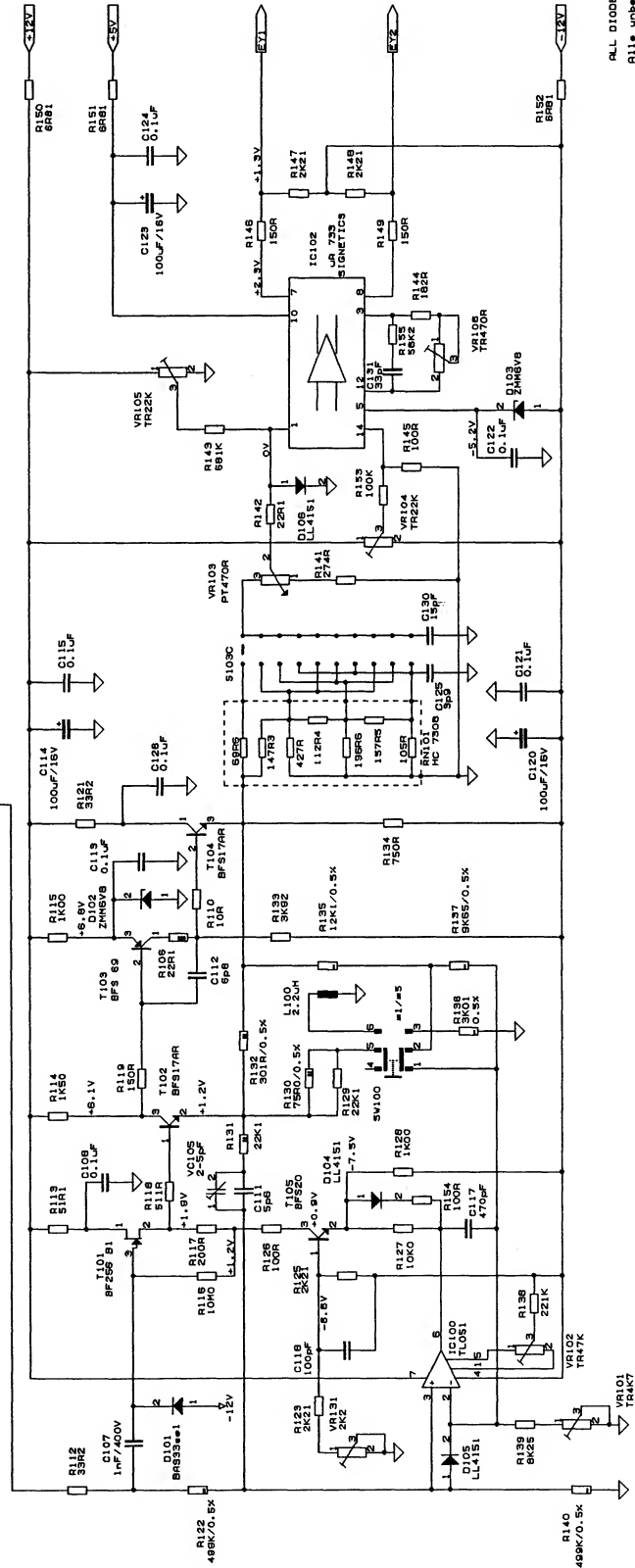
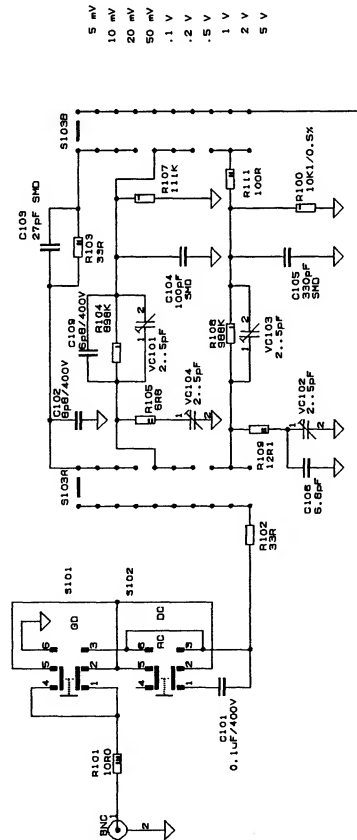
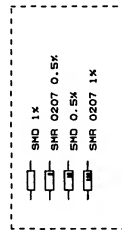
Widerstand- / Resistor identification

- Widerstand / Resistor: 0.6 W, 1 (2)%, T<sub>c</sub> = 50·10<sup>-6</sup>/K, metal film  
Widerstand / Resistor: 0.25W, 0.5%, T<sub>c</sub> = 50·10<sup>-6</sup>/K, metal film  
Hochvolt Widerstand / High voltage resistor: 1.6kV-, metal film  
Hochvolt Widerstand / High voltage resistor: 3.5kV-, metal film

Farbkennzeichnung der Anschlußdrähte / Color-Abbreviations for insulated wire

bk = schwarz / black	ye = gelb / yellow	gr = grau / grey
bn = braun / brown	gn = grün / green	wh = weiß / white
rd = rot / red	bl = blau / blue	trp = transparent / transparent
or = orange / orange	vi = violett / violet	gn/ye = grün-gelb / green-yellow
		trp = transparent / transparent

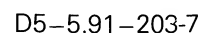
Anschlußfolge der Transistoren Terminals of Transistors	BC550C BC580C BF414 BF506	BF199 BF311 BF440 BF959	BF422 BF423	MPS918 MPS3640	BF256B-1	BSX19 (TO18) 2N3866 (TO39) 2N2369A (TO18)	U440	BF458 BF472 BD237 BUX86 MJE340	L200C TDA200 1=Limiting 2=Limiting 3=GND 4=Refer. 5=Output	FST627 Code NA BFS17(A) Code ES BF596 Code LH
Ansicht von unten Bottom view										
Ansicht von oben Top view										



ALL DIODES NOT SPECIFIED	1N4149
ALL UNBEZEICHNETEN DIODEN	
HM203 GMBH FRANKFURT/M. GERMANY	
ATTENUATOR AND PREAMPLIFIER HM203-3	
Document Number	EY 203-3
REV	C
Dater	Nov. 30, 1980 Bhszt
gr	



## ③





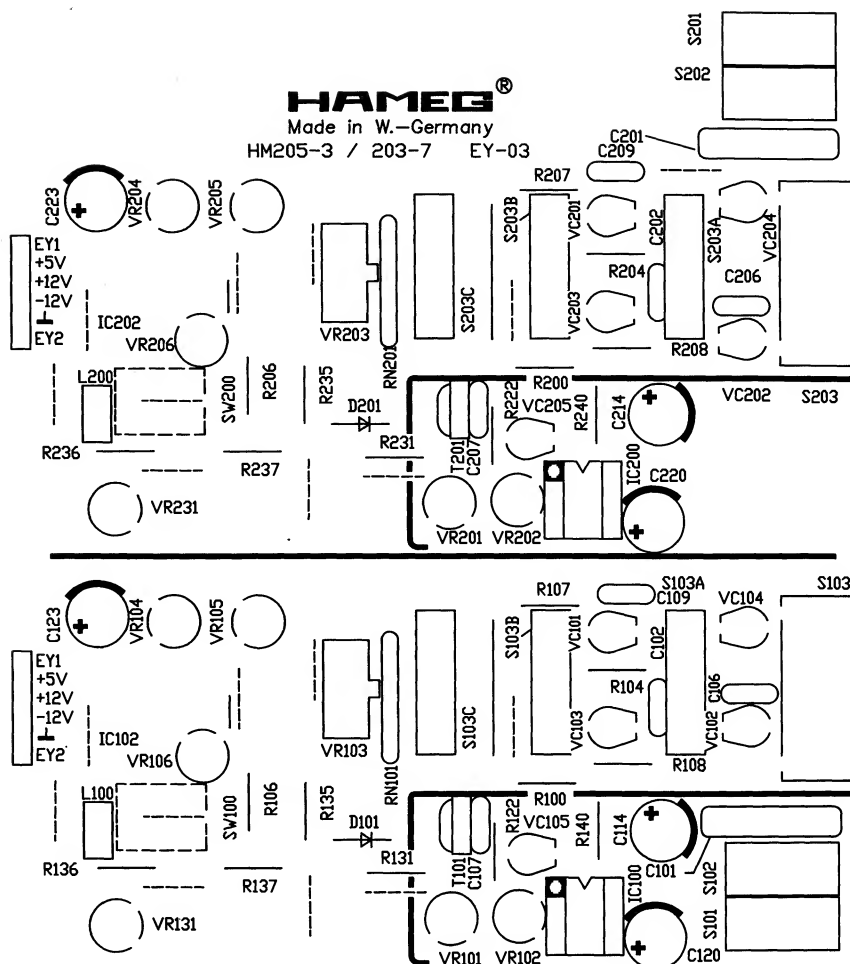








**oben  
top**



**unten**  
**bottom**

[illegible]